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200 MILES
UNDERGROUND.

THE

Mammoth Cave

KENTUCKY

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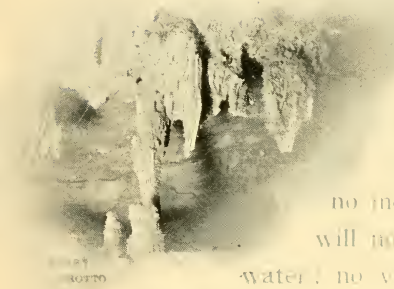
MAMMOTH CAVE.

THE wonderful work of water in sculpturing the surface of the earth is matter of common observation and of common remark. Hill and valley, gorge, cañon and waterfall, all have been seen in intimate relation; no rock so hard that it can forever resist the action of the stream; no mountain mass so great that it will not some time yield entirely to water; no valley so deep it may not be graven deeper or even filled to top by the transporting power of running streams. These changes all occur on the surface, and from our familiarity with them fall, often, to engage our close attention.



But there is no rock so dense that through it water will not pass; no union of particles so intimate but the secret, chemical processes of the world beneath can sever them; no place where all condi-

tion or solitary change associated with surface laws are so variable as in the underground world.

The visitor to Mammoth Cave must not forget the surface world when he walks through its immense gorges, its magnificent avenues, its Titanic halls, its star-bedecked domes. On every hand he will see a wealth of features which always emphasize the aspects of the outer world and explain them in a new language. He will see solution so slow that it is measured by tens of thousands of decades; he will note crystallization so tedious that he will be driven to madness should he attempt to compass the years that have passed since the process began. Should he question the fossil forms which sometimes thickly stud the cliffs and ledges along which he will pass they might tell to him a story beside which the wildest creation of the Orient would appear but as a tale of the nursery. In a thousand ways will he be impressed with the persistency of Nature's forceful methods. If he be a man accustomed to reflection he will come to the upper world a wiser man; if he be of poetic turn the somber shades through which he has just passed, the great avenues opening beyond into regions of infinite gloom, the lovely crystals "of purest ray serene" that reflect the

HOTEL LAWN.

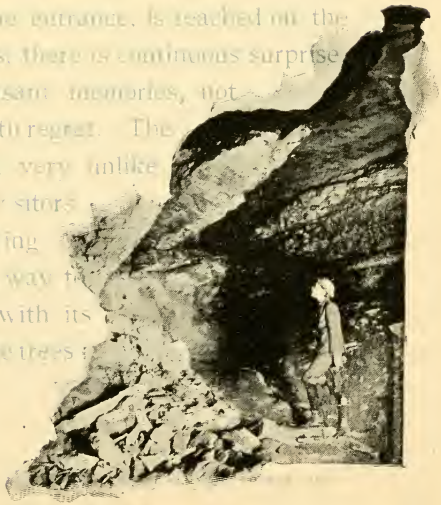
radiance of his light into still another corner of [illegible] eternal darkness and instead of revealing its outlines or a new beauty but extends its bounds, then his fancy will take a new direction and his poems a different tenor.

THE GATE.

Mammoth Cave owes its discovery to an accident, so the story goes, which happened in the year 1809. It is the old story of a hunter and a bear, the pursuer and the pursued. The bear was wounded and sought its lair in a vain endeavor to escape. Hutchins, for such was the hunter's name, lost no time in acquainting others with this important discovery, and Mammoth Cave became both a fact of history and of science. It is strange to relate that its first exploitation was connected with simply mercenary motives and that saltpetre, intended for use in gunpowder and connected with the war of 1812, was the incentive that led to more complete examination. The men who mined the soft soil, rich in nitre, are the men who first gave to

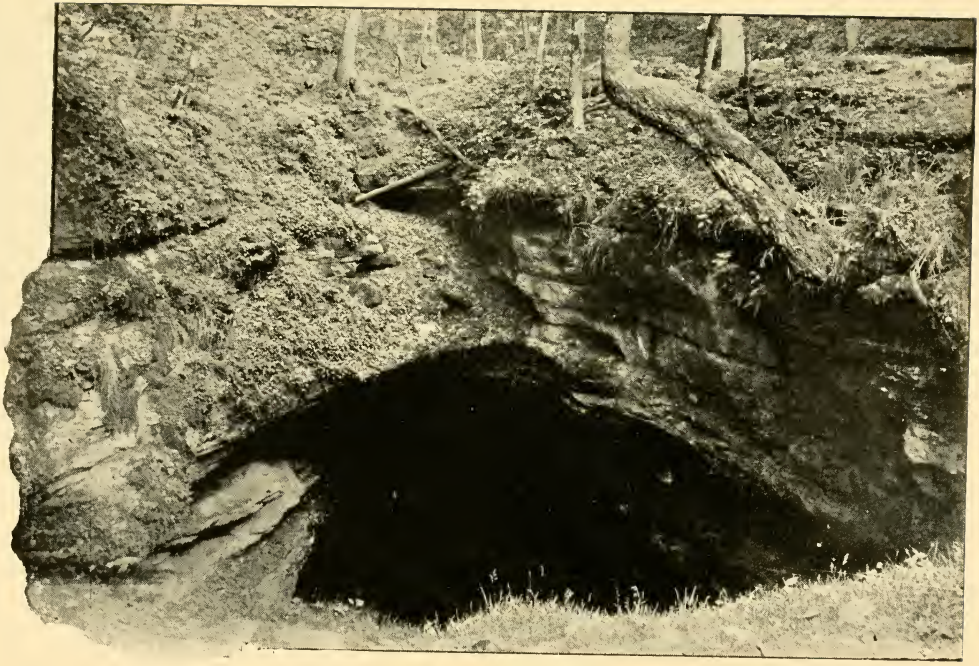
the outside world any reliable information of the great extent of this now famous world's wonder. Albeit their stories savored of the wonderful to so extent that many pronounced them romances, a knowledge of the cave that was really quite exact became common property and the immense cavern soon took its place among the great natural features of earth.

A visit to Mammoth Cave constitutes a unique experience in one's search of pleasure and the marvelous. From the moment of arrival at the quaint old hostelry, which dates so far back toward the beginning of the century that it is really a part of the history of the cavern, to the last backward look which is always given when the top of the rough stairway of rock, at the entrance, is reached on the return from the depths, there is continuous surprise, new experience, pleasant memories, not [illegible] unmixed with regret. The [illegible] surroundings are not very unlike those which the first visitors [illegible] saw. The old lumbering [illegible] stage-coach has given way to [illegible] the modern railway, with its [illegible] comforts and speed; the trees [illegible]



of the forest are larger but just as numerous; the wild flowers spring up as abundantly and flood the landscape as charmingly now as formerly; the woods are as full of feathered songsters, the neighboring river as prolific in brilliant and graceful fish, the cliffs which line its course as grand and glorious as when Hutchins first shot that famous bear.

Within the cavern the changes which have occurred since the days of saltpetre mining are less conspicuous still. In every essential respect the visitor sees the same features, the same angles, the same crystals—save where early Vandal hands have robbed some of the alcoves and halls of their beautiful forms; the same springs gush forth from dark recesses, and the same streams disappear with many a dash and reverberation into the same pits and darksome crevices. The very pipes and supports used by the workers in "peter-dirt" stand now as when left by them nearly a century ago. The famed houses in which the unfortunate consumptives sought relief from a malady which alone needed sunshine for momentary respite, but which no skill or art of men could stay, still stand on the left in the great recess called the Main Cave. The tracks made by feet of patient oxen and ruts worn by wheel



ENTRANCE TO CAVE.

of creeping vapors still remain to tell of unaccustomed toil in a clime not less than that of famed Tartarus. The rocks piled high on either side for a distance of a half mile or more tell of the work needed to get the marble-sandstone to the upper world. Rude hieroglyphic scratches on walls tell of Bishop, of Bronsford, of Miller and others who first sought to unravel the mysteries of its branching avenues or to sound the depths of its solitary recesses. Occasionally, even yet, fragments of half-burned reeds, a lost moccasin, a wooden bowl, tell of visits of aborigines long before foot of civilized man had awakened the echoes of the lofty domes. Change there has been, but it is so slow, so secret, if one please, that impressions formed three-quarters of a century ago are paralleled by those which are awakened to-day. There is only that change which comes from wider acquaintance with the windings of the chambers into those that are new and formerly unknown, a change which makes the visitor despair of ever fully unraveling all the

relations of the passages and crevices along which he journeys or through which he crawls. The same

massive rocks, scattered in the same profusion, meet the eye on every hand, for the Cave has been preserved in all its beauty as an original work of nature. The bridges over rivers and stairs leading up impassable cliffs, the iron guards along places of danger alone tell the visitor of the work of man.

If the visitor enter the great cavern in company with a chemist he will come forth well versed in Nature's secrets. For here he will learn how water charged with carbon dioxide has served as Nature's graving tools. On the roofs and walls he will discover the effects which iron and manganese oxides yield on a background of gray limestone. He will learn something of crystallization and the beautiful forms which these masses of sulphate of lime and calcite assume. If he stop in the Fairy Grotto, or tarry along Gothic Avenue, or venture into some of the unfrequented passages miles away from the

natural entrance, he will face enormous stalactites and tread upon massive stalagmites the beginning of which dates thousands of years back of the Christian era. In Martha's Vineyard, beyond the rivers, he will see those wonderful botryoidal forms of calcite which give to the locality its name. If he go far within Crystal Avenue he will learn how those wonderful acicular crystals of gypsum grow and spread out into a thousand fantastic forms, and simulate the flowers of the upper world, but whose petals are gigantic in comparison. Now and then he will see these fanciful beauties growing in plain defiance of the laws of gravitation and bending and twisting in a thousand devious ways. In the almost complete absence of water he will wonder how these forms were originally put into solution, and ask how are reproduced those beautiful crystals which fall, as white and silently as flakes of snow, at a sudden loud sound or echo. He will wonder at the thousands of cubic yards of solid rock which have been removed, and when he returns to the upper world and visits the laboratory of his chemist friend he will be chagrined at the puny processes of art.

It is impossible to mention, less possible to de-

GIANT'S COFFIN.

...ntic, all the objects of interest to visitors in the most gigantic cavern of the world. In no respect have its attractions failed to meet the expectations of the intelligent visitor. To the unintelligent, its story is as little understood as would be the famous lyrics of Homer or the marble poems of Praxitiles. The shells and corals which dot the walls of Echo River or boss the smooth walls of Gorin's Dome tell a story to those alone who have some intimate acquaintance with Nature. The blind insects—beetles, crickets, mites, gnats—the eyeless fish and crustaceans and leeches, the snow-white toadstools, all are meaningless to those who have never questioned the physical cause of vision. The naturalist will find here a paradise, forms of life that are unique, that range from vertebrate to worm, and these all tell him a story of antiquity and of life-law that only a naturalist may interpret. But if the visitor seeks the grand and impressive, if there be attraction in Stygian blackness, if the uncanny noises accompanying waters falling in

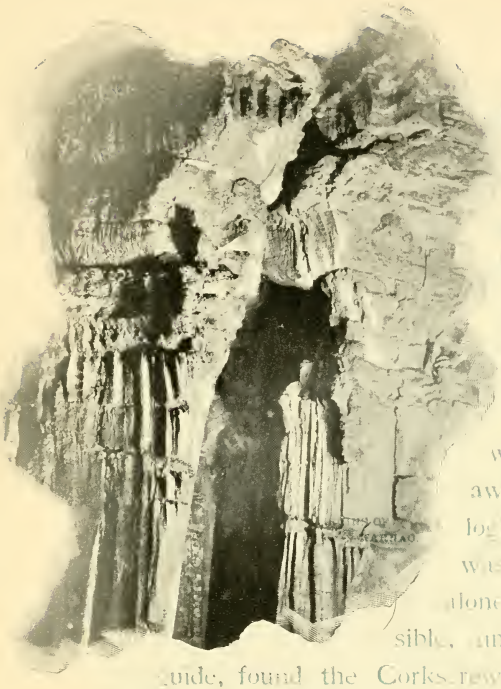
recesses that have yet escaped search. If the unison of sounds coming from the dark and mighty recesses of Echo River [illegible] back to the ear with a harmony and beauty that no cathedral nave ever yet equaled, find a response in any human heart, then Mammoth Cave will never cease to attract visitors of every degree and from every land.

The Echo River is one of the most remarkable features in this most remarkable group of wonders. Only a small portion of its whole course is accessible to visitors, but this part is truly wonderful. At times the river flows with almost imperceptible current, while at other times it fills quite to the top the great River Hall, blotting out the Dead Sea and the River Styx, both of which are really parts of the underground stream. It is traversed by boats for a distance of quite half a mile, and a ride over its clear waters is one of the unique experiences of the world—nowhere else can it be duplicated. The voyager passes under a low arch for a short space

and then the roof rises rapidly away from the water and he enters upon his subterranean water-journey in real fact. Nearly all the river is one vast reservoir, its branching avenues and side crevices, its lofty roof of limestone rock, its ancient battlemented shores, all serve as reflectors of every sound, no matter how slight, and send it back intensified a thousand times, with its roughnesses blended into one sweet volume of glorious harmony. Nowhere on earth, or in it, can such rich tone, coming back to one with ever diminishing volume as it rolls down along the unknown halls and is reflected from secret chamber walls, be heard. Long experience on the part of the well-trained guides enables the production of the right notes to bring forth the wonders of Echo River, and no visitor hears them but is impressed with its glories. Time and again, for months, have we listened to these noble reverberations until they have become a part of our musical nature.

Perhaps the largest single rock to be found, as a detached mass, in the cavern is the Giant's Coffin. Fact and fancy alike serve to make it attractive. Its mass is very great, and its weight, estimated on its measurements by taking the specific gravity of

STAR CHAMBER.



limestone, as commonly given, is over two thousand tons. This immense rock has been torn from the side of the Main Cave, but when this fact was accomplished, away back in geologic times, an avenue was revealed which alone had rendered possible, until William, the guide, found the Corkscrew, a visit to the remoter portions of the cavern. The rock upon which the name of Giant's Coffin has been so well bestowed is entirely of limestone, with a thickness of eighteen and a total length of forty-three feet. The visitor winds around it on the usual way in which he goes to the "end of the Cave" on the long route. "The Standing Rocks" are not far removed from this part of the cavern and have been similarly torn from the roof which is here nearly

sixty feet high. They were detached at the same time and by the same causes, whatever they were, that made the Giant's Coffin a fact. But, in falling, they struck upon their edge and sank deeply enough in the material of the bottom to maintain that position. They are detached masses of limestone strata not more than two feet in thickness.

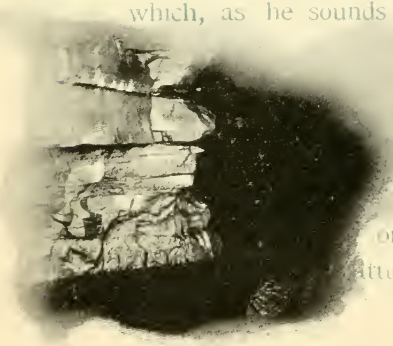
Far within the great cavern occur many interesting and fantastic groupings of stalactitic matter that require but little imagination to conceive them as simulating familiar objects. Near the end of the remarkable Pass of El Ghor—a tortuous, narrow, but lofty, channel which marks the work of one of the latest of the underground streams—the walls above and on each side are one indescribable maze of calcite accumulations. Here, as indeed is true of all parts of Mammoth Cave where crystallization is in progress, the underground traveler proceeds along a

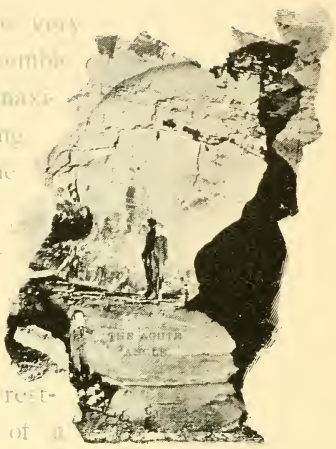
pathways which is not far below the surface of the ground. The characteristic phenomena which indicate approach to the surface are, first, the dripping of waters which only enter the channels of this subterranean world at points near the surface; second, the growing stalactites, which are only at the upper levels; and, third, the sandstone strata which everywhere, in this part of Kentucky, cap the subcarboniferous limestone. When the upper mountain limestone layers are worn or dissolved away, the sand-stones still higher, far more friable and yielding readily to the separating power of water, break away into immense masses or even into piles of rock which often completely close the passages and limit many large avenues. The magnificent avenue which opens from the Rotunda, and which, after the celebrated ornithologist, is named Audubon's Avenue, is entirely closed at a distance of a half mile by a vast mass of rock detached, in the manner described, from above. But a journey to its end is well worth the time and toil, for here is Colyer's Bower, one of the most convenient of the smaller recesses in which stalactitic formation may be seen in progress; at this locality occur some of the most beautiful of the growing stalactites. In the

ENTRANCE TO GOTHIC AVENUE.

middle of the tower is a well of liquid water, every drop of which has played its part in adding a note to the massive crystals above, and which are reflected from its mirrored surface. Eventually, through some secret passage, the water finds a way to the Echo River, whence, in turn, it reaches the Green River and again circulates in the world outside.

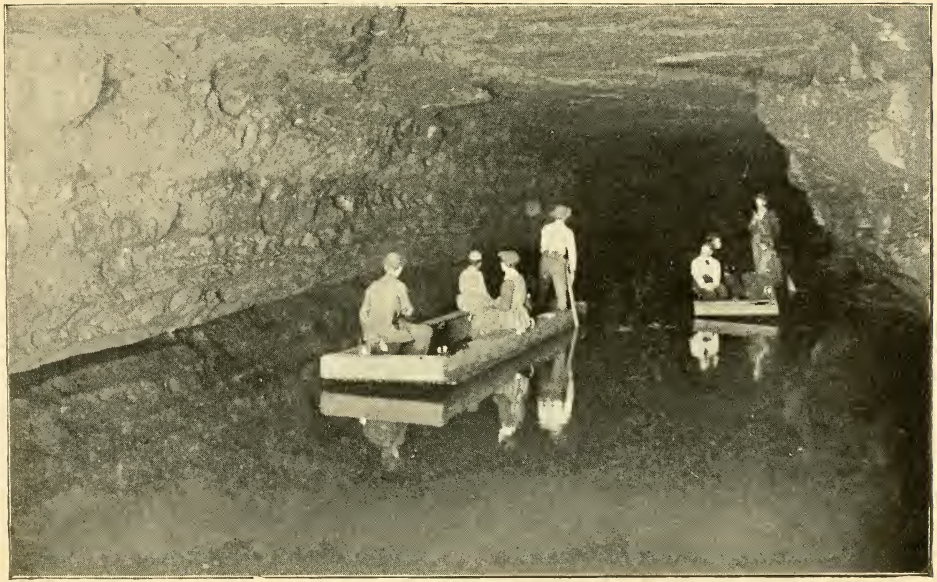
In many portions of those wonderfully intricate channels known as Spark's Avenue and Pensico Avenue, the tourist may hear reverberations of footfalls and wonderfully sweet echoes of human voices coming apparently from the depths below. These points, several of which are particularly excellent, are really crossings of his own passageway over others still beneath him. In one place in Pensico Avenue the listener actually stands above a dome which, as he sounds a particular note, serves as a gigantic resonance box, and takes up the vibrations of his voice only to send it back attuned and strength-





vated a thousand fold. The very earth beneath him is felt to tremble as the vibrations reach their maximum amplitude; closely listening one may hear the sweet volume of sound rolling along avenues yet untrodden by human feet to be finally lost in the unknown depths. The celebrated side passage known as Gothic Avenue presents interesting attractions which are of a unique character. Among them are the stalactites which, abounding in this portion of the cavern, are the largest and most remarkable within its limits. Curious resemblances or historic and mythologic events together have conspired to furnish names to the largest of these. Cæsar and Pompey, the Pillar of Hercules, the Oak Tree, the Bridal Chamber, the Elephants' Heads and the Wasps' Nests are among the names which the fancy of the visitor or the caprice of the guides has affixed to these relics of former water action. Except at a single locality this avenue, which is at the higher level of the cave, is quite dry, and little, if any, change is now in

progress. Beyond the usual terminus, at the rock called Lovers' Leap, the avenue is quite closed by a vast mass of sandstone debris fallen from above. But down the steep hill at which the "short route" generally ends leads a pathway which passes through a narrow passage in the vertical wall to the left, fifty feet below, into Elbow Crevice—a portion of the cavern which should be seen by all visitors. Beyond the crevice lie the Cooling Tub, Vulcan's Forge, Napoleon's Dome, Annetta's Dome, Shafer's Brook—in which alone are found the snow-white leeches—and several pits and domes but recently discovered. The sound of falling waters coming through small passages to the right or left informs the visitor that in this portion of the cave the processes of disintegration and solution are in active progress. From the entrance of Gothic Avenue to Annetta's Dome the visitor will have passed from the highest to the third level. Around him and near him are pits which extend downward to the level of Echo River, which runs not far distant from this chaotic locality. A hundred objects are here that command one; there are poems registered in the rocks, fairy forms of bygone ages that tell of life and sunshine; and hard by this



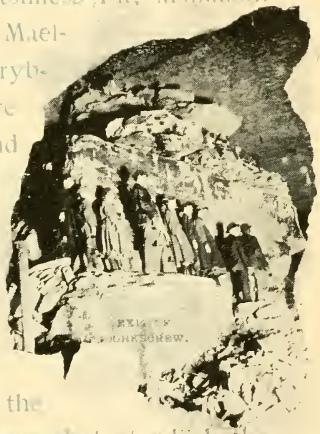
ON ECHO RIVER.

THE CORKSCREW

frail record of beauty lies a fossil story of ruth and death. The observer will here find record of a former world of organisms with whose diminutive cousins only he now intimate acquaintance. Here, in sleep and silence enshrined, they rest, small tattlers of continental secrets!

In this portion of the cave the walls best exhibit those phenomena which are always interpreted as meaning the attrition of matter carried along by running water. The passages are narrow, but high; they become broader below. In the dim light of the visitor's lamp the effect of a perspective drawing is produced on looking upward, and the roofs of the avenues appear to be far away. Pebbles, derived from a thin layer of conglomerate far above, strew the pathway and tell the story of wear and denudation. Animal life is not as abundant in the locality as it is at the higher levels, but enough may be found to demonstrate that no portion of the cavern in which water is found is devoid of some creature forms

Perhaps visitors to Mammoth Cave are most impressed with the lofty domes and deep pits which are found in some portions of this underground domain. Of those that are accessible to the visitor without great danger and fatigue the best known are Gorin's Dome, the Bottomless Pit, Mammoth Dome, Napoleon's Dome, the Maelstrom, and Scylla and Charybdis, all but two of which are situated in that intricate and wonderful portion called the Labyrinth. The first named is viewed through a natural circular opening in the wall quite three-fourths the way from the bottom. Illuminated by the guides from a point still above that at which the visitor is stationed the effect of the brilliant lights on the walls beyond, white as alabaster, fluted and folded in a thousand curious and fantastic forms, is indescribably grand and impressive. Coupled with the great size of the space, everywhere shading off into infinite gloom, is the roar of falling water, or the splash of Lilliputian cascades



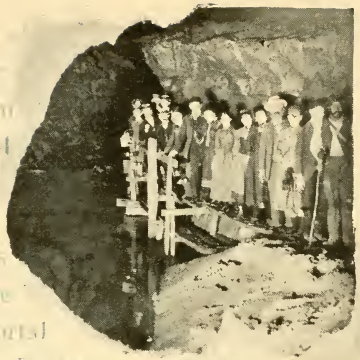
if seen in the dry season. Below, but beyond observation, runs a portion of Echo River into which, from a station high above that occupied by the guide, it is possible to throw stones the fall of which awakens ten thousand sounds and echoes. Stalactitic matter, of purest white, lends variety to the vertical walls; where this is wanting the method of work of falling water, in bygone ages, is clearly seen. Not far away is the Bottomless Pit, and above it, rising sheer to the topmost level of the cavern, is Shelby's Dome, named for the first Governor of Kentucky. Its bottom, for notwithstanding its name it has one, is nearly two hundred feet below the level at which the observer stands. For many years it was an insurmountable obstacle to further exploration in this direction until Bishop, the original explorer of the cave, finally crossed it on a cedar sapling, but not without great danger.

This pit is one of three, the other two being Scylla and Charybdis, well-named and in the relation to each other of those celebrated dangers of mythologic fame. These two pits are not to be seen by visitors, their approach being by a devious and dangerous passage which opens from River

MARTHA WASHINGTON'S STATUE.

Hall, nearly a mile distant. But of all the po which the visitor sees, that called Mammoth Dome is the largest and most impressive. From top to bottom the distance is nearly two hundred and eighty feet; while at the end, the Ruins of Karnak, formerly called the Egyptian Temples, stand out in bold relief. These giant columns indeed closely resemble the works of art of some long-lost underground race, and it does not require a very vivid imagination to see the great recesses and storied walls the scene of weird activity or to imagine them peopled with myriads of gnomes and sprites upon whose labors the visitor is an unwelcome intruder. The Mammoth Dome should be visited by every person who desires to see water at work and completing a task begun away back in earth's history. The shadows on the walls, fitfully moving with change of light and

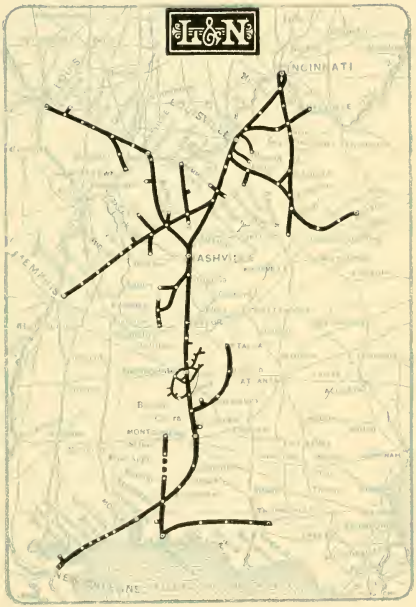
varying ever as the onlooker moves, seem alive, and the eternal gloom, dispelled but little by the glare of lamps, recalls scenes made famous by the pencil of the immortal Dore, first voiced by Dante:



"There do the hideous harpies make their nests,
Who chased the Trojans from the Strophades,
With sad announcement of impending doom;
Broad wings have they, and necks and faces human,
And feet with claws, and their great bellies fledged."

But why attempt the impossible? Why attempt to paint a scene beyond the skill of any? Alone, in such a place, one sees only spirit life and uncanny forms; sees only the deformed and uncouth, the strange and chimerical. The very stillness becomes eloquent and the blackness populous; the drippings of water chants a thousand poems. "O Night and Solitude! Ye are the peopled; the full of life!"

THIS MAP IS A CORRECT MAP OF THE MAIN LINE OF THE LOUISVILLE & NASHVILLE RAILROAD AND MILES SHOWN OF LOUISVILLE, KY. BRANCH RAILROAD DIRECT TO THE CAVE FROM GLASGOW JUNCTION



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